

SAFETY (50)**50.1 GENERAL**

An orange safety vest, shirt, or other orange garment (such as an orange windbreaker or coat) meeting with ITD approval shall be worn at all times when working on or near the roadway. An ITD-issued orange hard hat shall be worn in areas where there is a possible danger of head injury from impact, falling or flying objects, or electrical shock or in any area designated as a "Hard Hat Area" by the District Engineer, Supervisor, Contractor, or Supplier. The ITD-issued orange soft cap is recommended when the hard hat is not required.

There are work situations that require additional protective gear such as safety-toed boots, respirators, gloves, and eye protection or face shields. All employees are responsible for wearing the proper protective equipment.

All maintenance personnel shall be aware of the safety precautions noted in the [Safety/Loss Control Manual, Section 2.3](#), Exposure and Infection Control, and are required to meet all OSHA requirements and standards to fulfill the level of protection for the potential exposure. Necessary personal protective equipment will be provided at no cost by ITD and be readily accessible and available in appropriate sizes. If contact with potentially infectious materials can be reasonably anticipated, ITD will provide training, testing, information, and vaccinations as appropriate for the potential exposure.

Report the following to your supervisor:

- Unsafe conditions found in vehicles, equipment, shops, or garages that may jeopardize the safety of employees or the general public.
- Unsafe acts by employees that jeopardize the safety of other employees, the general public, or themselves.

Reference: [Employee Safety/Loss Control Manual](#).

50.2 INDUSTRIAL ACCIDENTS

Report all accidents, regardless of severity, to your immediate supervisor. Even a small accident may become serious if proper precautions are not taken. Reporting a small accident may help eliminate the cause, thus saving one of your fellow workers from a similar or more severe injury.

The supervisor shall immediately notify the District EEO/Safety/Training Coordinator of any accident. The Coordinator will provide assistance, if needed, in completing the appropriate forms.

50.3 VEHICLES

The operator of any ITD vehicle is responsible for maintaining that vehicle in proper working condition and is responsible for the proper operation of the vehicle ([see Administrative Policy A-06-05 and A-06-06](#)). Seat belts shall be used when driving or riding in ITD vehicles equipped with them anytime the vehicle is in motion. Vehicles parked on the travelway for extended work activities shall have necessary warning signs in place and an overhead light in operation. Whenever possible, vehicles shall be parked or stopped clear of the roadway. It is the responsibility of the operator and supervisor to make sure that all backup alarms on equipment are maintained in good working condition. It is the operator's responsibility to ensure the area to the immediate rear of the vehicle is clear before operating in reverse.

Aggregate on the roadway constitutes a high incidence rate of ITD tort claims. Sanders and trucks shall be loaded below capacity to avoid rock spills. Sanders shall be equipped with rock deflection shields that are designed to prevent rock from striking vehicles in lanes occupied by the public.

If you are involved in an accident, do not make any statement concerning your responsibility for the accident. This statement will be made on ITD's Accident Report. When vehicular accidents involve ITD equipment, complete the appropriate accident reports correctly and promptly and send them to your district or headquarters office. Document the facts of an accident that could result in a tort liability claim against the state of Idaho. Items to note are weather and pavement conditions, visibility and sight distance, traffic control devices, road equipment within the roadway, and any first-aid assistance rendered. Snapshots or videotape are invaluable. If a citizen involved in such an incident requests information on filing a claim, advise the potential claimant that [Idaho Code](#) requires that all claims against the state be filed with the Secretary of State within 180 days. Offer assistance when you witness an accident, whether or not ITD equipment is involved.

51.0 TRAFFIC CONTROL

Any work activity on or immediately adjacent to the roadway shall not commence until proper warning signs are in place. The extent of signing shall be appropriate, considering alignment, visibility, and traffic volume. All signs must meet the specifications outlined in the [Manual on Uniform Traffic Control Devices \(MUTCD\)](#) as adopted by the state. A written record shall be made of the traffic control installed, either as a diary entry or as a Traffic Control Plan. ([Administrative Policy A-12-04](#).)

Warning signs alert approaching motorists; therefore, erect warning signs facing oncoming traffic so that motorists can easily bring their vehicles to a stop before reaching the first piece of equipment or person working on the roadway. In most cases, place signs at least 155 m (500 feet) from the activity. Erect signs so that the bottom of the sign is at least 0.3 m (1 foot) above the shoulder. ([MUTCD Section 6B-3](#).)

If the activity is not completed at the end of the working day, temporary signs shall be removed or laid down a minimum of 5 m (15 feet) outside the travel lane. Remove signs placed to warn traffic of hazards as soon as the hazard is eliminated.

51.1 Exceptions to Signing

It is impractical to place warning signs for all operations; hence the "flashing amber light" should be used on vehicles involved.

Warning signs are sometimes impractical on patrol maintenance operations such as removing isolated boulders, straightening signs, etc.; however, every effort should be made to minimize the hazards to the public and ITD personnel in conducting these activities. Whenever possible, vehicles used in these operations should be parked clear of the travel way.

51.2 Delay of Vehicles

Avoid traffic delays through a maintenance operation that exceed ten minutes at any one time or where two or more interruptions total more than 15 minutes. In areas with high traffic volumes (ADT exceeds 3,000 vehicles per day on a two-lane facility or 6,000 vehicles per day on facility of four lanes or more), the delay may have to be reduced if traffic backup becomes intolerable. For this reason, detours should be planned for high volume roads and streets if possible. If traffic has not been detoured from a four-lane facility, keep at least one lane in each direction open to traffic. Stopping of interstate traffic should be avoided unless no other feasible alternative exists.

Schedule traffic-delaying maintenance operations and contracted utility adjustments to avoid morning and evening rush hours on high traffic volume highways that carry commuter traffic in major urban areas.

51.3 Traffic Control Plan

The [MUTCD](#) is the legal document that must be satisfied with any traffic control used. If there are any questions on the use of signs, signals, traffic markings, or barricades, the [MUTCD](#) (as adopted by the state) will be the final authority, unless ITD has more restrictive standards. Part VI of the MUTCD covers construction and maintenance signs. It establishes principles to be observed in the design, installation, and maintenance of traffic control devices and prescribes standards where possible. However, due to the variety of conditions encountered, no one standard sequence of signs or other control devices can be set up as an inflexible arrangement for all situations. Therefore, use the standard plans (those in the MUTCD) as a basic guideline. The [MUTCD](#) sets minimum requirements and at no time should any traffic control setup use less than the minimum recommended standards for traffic control devices. Review each operation to determine the appropriate traffic control plan. Document the type of plan used by noting the plan designation number and all modifications used. The District Traffic Engineer can provide assistance or answer questions related to traffic control plans.

51.4 Responsibility

The supervisor in charge of a maintenance operation is directly responsible for inspection of traffic control devices. If the supervisor must be absent from the operation for more than two hours, a member of the crew who has been certified in traffic control will be responsible for surveillance. ([Administrative Policy A-12-17.](#))

51.5 Utility Companies

When a utility company receives an approved permit to work in the right-of-way, the permit shall include specific requirements and restrictions regarding traffic control. A traffic control plan shall be submitted by the utility company when the District Engineer ascertains the work is extensive enough to warrant one. The Maintenance Foreman, in whose area the work is to be done, or his designee will review the traffic control operation of the company as necessary to ensure compliance with the terms of the permit.

51.6 Obscured Visibility

Any time that maintenance operations create dust and reduce visibility for motorists driving through work zones, appropriate traffic control measures must be in place to avoid increased accident potential. Generally, reduced visibility work zones will require employment of flagpersons or, for moving operations, a shadow vehicle equipped with proper signing and lights. Self-propelled and tow brooms that create dusty conditions will ordinarily require special traffic control measures under most situations. However, brooms of any kind, as well as other slow moving maintenance vehicles that are working in the travelway of high speed roadways [88 kph (55 mph) and over], require shadow vehicles as a minimum.

52.0 HAZARDOUS MATERIAL/INCIDENTS OR SPILLS

Hazardous materials require special procedures, as outlined in the following sections.

52.1 Emergency Response (General Procedures)

When you are called to respond to or come upon an accident involving hazardous materials:

- **IDENTIFY THE HAZARDS.** Look for placards, container labels, shipping papers and/or knowledgeable persons.

If a "Hazardous" placard is displayed, remain at a distance until you have identified the hazard.

DO NOT LEAVE YOUR RADIO/VEHICLE until you have communicated all relevant information to the dispatcher and have been released. Notify the dispatcher or district office with as much information as possible. (Refer to your [Emergency Response Guidebook](#) and the *Idaho State Communication Center's*

Hazardous Materials Incident Information Report.) The district will notify the district responders, management, and the EMS dispatcher at 1-800-632-8000. The EMS office will notify the Idaho State Police, Idaho Division of Environmental Quality, and other possible responders. It is VITAL that communications be maintained to organize an emergency response.

- **SECURE THE SCENE.** It is generally considered good practice to stop traffic at least until the contents can be further identified. A rule of thumb is to keep people 600 m (2,000 feet) from a "hazardous" accident until the material is identified and safety precautions are understood.

Refer to your *Emergency Response Guidebook* for isolation and evacuation distances for a specific material. Traffic control signing should conform to the *MUTCD manual* as adopted by the state. Traffic should not be stopped in low areas where gases and fumes that are heavier than air may accumulate. When selecting a site to stop traffic, consideration must be given to adequate sight distance and for a turnaround point should it be necessary. Reflective triangles should be used in lieu of flares for traffic control.

- **SAFE SITE ENTRY.** When approaching the scene of an accident involving any cargo (not only regulated hazardous materials):
 - Approach the incident cautiously from an upwind direction, if possible.
 - Move and keep people away from the incident scene. Refer to your *Emergency Response Guidebook* for distances.
 - Do not walk into or touch any spilled material.
 - Avoid inhaling fumes, smoke, and vapors even if no hazardous materials are involved.
 - Do not assume that gases or vapors are harmless because of the lack of smell. Odorless gases or vapors may be harmful.
 - When entry is necessary, use appropriate protective gear.
 - Assist people involved in the accident if you are sure that you are not subjecting yourself or others to life-threatening circumstances.
 - Limit first-aid and medical procedures to those who require immediate attention until professional help arrives. Refer to your *Emergency Response Guidebook* for suggested first-aid procedures.
 - Leave major firefighting to firefighters except under their direction. If flammable materials are involved, do not permit smoking or flares in the vicinity of the incident.

- Unless a qualified person is present and supervising the safe handling of the material or you know the chemical characteristics of the material and what should be done, do not handle or move the material.
- Do not permit people to handle debris or take souvenirs from the accident scene.
- At the accident scene, turn over control to the properly identified Incident Commander.
- For reimbursement purposes, record the hours and equipment time as well as the amount of material used. Document time and actions taken and any special instructions given.
- You may aid in any way possible if immediate evacuation of the area is necessary to protect human life. Major evacuations are coordinated with local and state emergency management organizations. The District Engineer is in charge.

52.2 Chemical Emergency Procedures

When chemicals are involved in an incident, the following emergency actions and precautions should also be taken:

- Keep well away from the wreckage, material, container, or other material involved. If a tank is heavily exposed to fire, evacuate the area and let the fire burn.
- The motor vehicle's ignition should be off. Vehicles in close proximity to a flammable or combustible spillage should not be started, as an ignition spark may start a fire.
- Trained rescue personnel should examine anyone who may have become contaminated with chemicals. They will also remove the contaminating agent as soon as possible.

52.3 Poison Emergency Procedures

When poisons are involved and a person may be poisoned, immediately call the Poison Information Center at 1-800-860-0620. Labels on poisons contain good information such as first-aid treatment, antidotes, directions for use, etc. The labels should be given to medical personnel.

52.4 Radioactive Materials Emergency Procedures

When incidents involve radioactive materials, the following emergency actions and precautions should also be taken:

- Segregate and detain persons who have had possible contact with the radioactive material for further examination. Emergency removal of the contaminating agent should be done as soon as possible by qualified person(s).

- DO NOT eat, drink, or smoke in the incident area. DO NOT use food or drinking water that may have been in contact with material from the incident area.
- DO NOT try to do too much prior to the arrival of radiation protection specialists and physicians.

52.5 General Spill Relief Procedures

Any observed spills of petroleum products or hazardous substances in a water source must be reported to the U.S. Environmental Protection Agency. ITD personnel shall contact the State Communication Center immediately and the dispatcher will contact all other necessary agencies. Quick action is sometimes necessary to alert downstream users.

CARE should be taken to prevent any hazardous substances from contaminating streams or sewers and powdered forms from being scattered by wind.

Attempt to contain the spills that are not health or life threatening, based on the information available, by:

- Damming the material with fine ashes, sand, straw, or earth.
- Trenching the spill liquid into a hole or depression.
- Diverting the spill away from streams or sewers.
- Catching the spilled material in containers.

Do not engage in clean-up activities unless directed by the District Engineer or higher authority. You may render emergency aid to contain a spill. For instance, place aggregate or any other handy material in a ditch to prevent stream or water pollution. Actions required to prevent injury and property damage may be taken.

When an unknown material is discovered, sampling must be done to determine what it is. The Idaho State Police Hazardous Materials Specialists have kits that can categorize materials into major hazard classes. If the material is considered to be immediately dangerous to life and health, the Idaho State Police can expedite a laboratory test. If the risks are low, cover and/or protect the material and request the Idaho State Police to collect a sample. Then send the sample to a lab in your area for testing. Upon coordination with the Idaho Division of Environmental Quality and the district office, properly dispose of the material.

DO NOT REMOVE material from the site without a supervisor's approval and without knowing what the material is or the proper disposal method.

52.6 Emergency Notification Response Roster

Contact	Location	Counties
District 1 Engineer 772-1200	Coeur d'Alene	Bonner, Boundary, Kootenai, Benewah, Shoshone

District 2 Engineer 799-5090	Lewiston	Latah, Clearwater, Lewis, Nez Perce, Idaho
District 3 Engineer 334-8300	Boise	Adams, Valley Ada, Washington, Payette, Boise, Elmore, Owyhee, Canyon, Gem
District 4 Engineer 886-7800	Shoshone	Camas, Blaine, Gooding, Lincoln, Minidoka, Jerome, Twin Falls, Cassia
District 5 Engineer 239-3300	Pocatello	Bannock, Bingham, Power, Oneida, Franklin, Caribou, Bear Lake
District 6 Engineer 745-7781	Rigby	Bonneville, Madison, Teton, Fremont, Jefferson, Clark, Custer, Lemhi, Butte

In case of an emergency situation of this type, contact the District Engineer or his representative in the area of the spill. The office numbers given can be dialed at any time including weekends and holidays.

Backup notification can be made to ITD Headquarters through one of the following:

- Maintenance Engineer 332-7893
- Assistant Maintenance Engineer 334-8417

52.7 Employee Responsibility

All employees shall attend the 4-hour Hazardous Material Training Session provided by ITD to become familiar with placarding, standard operating procedure, characteristics of chemicals, health hazards, and emergency procedures.

All employees who use hazardous materials to perform their job duties shall request a copy of the [Material Safety Data Sheet \(MSDS\)](#) when the product is supplied to them. They must read the MSDS, paying close attention to health hazard data, spill, or leak procedures and special protection information. Special procedures must be followed and suggested protective equipment used at all times. ITD will provide all needed safety equipment through normal supply procedures, on request.

52.8 In-House Emergency Spill Procedures

When hazardous material spills occur or are discovered in ITD yards or buildings, the following procedures should be followed:

- If the material or response method is unknown or you don't have proper training or equipment, get away and get help.

- Identify the material using MSDS, labels, or placards.
- Stop, control, and contain material; use the buddy system whenever possible.
- Properly dispose of the material, cleanup agent, and disposable protective gear.
- Report the spill and the actions taken to your supervisor and the ITD Hazardous Materials Coordinator.

52.9 District Headquarters Procedures

The district office will notify the foreman where the incident occurred, the District Maintenance or Regional Engineer, the ITD Headquarters Maintenance Engineer, and the Port of Entry Manager (if the incident involves a Port of Entry facility or employee), giving the information from the completed *Idaho State Communication Center's Hazardous Materials Incident Information Report*. The district office will submit copies to the ITD Headquarters Maintenance and Environmental Sections.

52.10 Interagency Hazardous Materials Liability Agreement

Any ITD section or district must administer an "Interagency Hazardous Materials Liability Agreement" when that section or district agrees to allow an outside state, county, or local agency to:

- Purchase hazardous materials from ITD.
- Use hazardous materials belonging to ITD.
- Borrow hazardous materials from ITD.
- Jointly use any hazardous materials with ITD.

53.0 PERSONAL SAFETY

Employees are responsible for their own safety and the safety of coworkers.

53.1 Safety Precautions

Even though all of the obvious safety precautions have been taken to protect employees on the job, be alert for unexpected and unforeseen threats to safety.

Employees are responsible for furnishing and wearing personal protective clothing that adequately meets the safety requirements for the general type of work being performed. Special types of protective clothing and devices may be recommended from time to time to fit the needs of particular jobs. On these occasions, the foreman requisitions sufficient items to supply the needs of the crew. When special items of equipment or clothing are furnished, employees must wear or use them when performing the operation.

Hard hats and safety vests will be worn in accordance with [ITD's safety policy](#).

Always wear face shields or goggles when there is danger of flying or falling objects getting into the eyes.

Wear safety shoes and hard hats where there is danger of dropping heavy or sharp objects or having them fall on you.

Wear heavy gloves when handling cutting edges, rocks, reinforcing steel, or other material with sharp or jagged edges.

In cases of broken wires, poles, or insulators on high-power transmission lines, take extreme care to avoid electrocution. Always use insulated tools or rubber gloves and be sure that the wire does not contact any worker or vehicle which might cause a ground.

When using hot or toxic materials, be sure the material does not spill on clothing or skin.

When mounting or dismounting from a vehicle, be sure your footing is secure; avoid jumping. Use hand holds and mount or dismount facing equipment.

Do not try to overlift. Obtain help if a big load must be lifted. Keep your back straight and do the lifting with your legs. When setting the load down, do not catch your fingers or toes. Also, place the load so that it will not fall and cause injury. Loads which obstruct the view of the carrier are too big and must be carried by more than one person.

Do not wear loose-fitting clothing when working around machinery. Key chains, watch chains, or loose shoelaces may cause accidents if caught in machinery. Do not wear rings when working on equipment.

Wear adequate respirators when exposed to dry cement or excessive dust, adjacent to drillers, dangerous gases may be present, near spray painters (including those exposed to spray in the striping machine), and on sandblasting operations.

Aprons of the proper type for the work involved will be worn by blacksmiths and welders (leather), battery handlers and dip-tank men (rubber), and any other employee who comes into direct contact with harmful materials.

A body harness and lanyards will be worn and used by tree climbers, painters, bridge workers, electricians, and any others in high-level work.

When using a pick, make sure there is clearance in all directions so that no person or object will be hit in the process of swinging. The pick can also glance off solid objects, inflicting serious and painful injury.

53.2 Drinking Water

Obtain drinking water only from approved sources; avoid the dangers of contamination. Furnish individual paper cups where possible. If disposable cups are unavailable, use individual drinking cups.

53.3 Overhead Utility Lines

Do not work where the possibility of contacting power lines exists. If work must be accomplished near a power source, request the power company de-energize the line.

A person shall not:

- Require any other person to perform any function or activity upon any land, building, highway, waterway, or other premises if at any time during the performance of such function or activity it is possible that the person or any part of any tool or material used by the person could move or be placed or brought closer to any high-voltage, overhead line than the following clearances:
 - For lines nominally rated at 50 kilovolts or less, 3.1 m (10 feet) of clearance.
 - For lines nominally rated at over 50 kilovolts, 3.1 m plus 1 cm (10 feet plus 0.4 inch) for each kilovolt over 50 kilovolts.
- Operate any mechanical or hoisting equipment or any load of such equipment, any part of which is capable of vertical, lateral, or swinging motion closer to any high-voltage, overhead lines than the clearances specified above.

53.4 Underground Utilities

Notify the companies involved when digging in the general area of underground utilities (electric, telephone, water, etc.).

Give utilities at least two (2) business days notice before starting work. State location and purpose for excavation and allow time for the company to locate its utility. Check encroachment permits for the type of utilities and placement.

An excavator shall use reasonable care to avoid damaging underground facilities. An excavator shall:

- Determine by hand digging, in the area 610 mm (24 inches) or less from the facilities, the precise, actual location of underground facilities which have been marked.
- Plan the excavation to avoid damage to, or minimize interference with, underground facilities in and near the excavation area.

- Provide such support for underground facilities in and near the construction area, including during backfill operations, as may be reasonably necessary for the protection of such facilities.

53.5 Poison Ivy, Oak, or Sumac

When working around poison ivy, oak, or sumac, be sure that all sleeves are rolled down and buttoned and that gloves are worn. After working in the vicinity of these poisonous weeds, wash yourself and your clothing thoroughly with strong soap and warm water. If infection occurs, follow first-aid measures and see a doctor.

53.6 Handling Explosives

Store explosives in bulletproof and fire-resistant buildings in accordance with local, state, and federal rules. All possible precautions must be taken in handling and storing explosives.

Place proper placards on all sides of vehicles transporting explosives. One person will be in charge who has full knowledge of the state and local ordinances governing the transportation of explosives.

Do not transport blasting caps in the same vehicle carrying explosives or in a radio-equipped vehicle if the cap wires have been unfolded or extended. Caps can be detonated at a distance of 1.8 m (6 feet) from the antenna.

Do not use transmitting equipment within 305 m (1,000 feet) of any part of a blasting operation, including cell phones and pagers – turn off so calls are not received.

Only those possessing full knowledge of the use of explosives are authorized to use them. Take all precautions to see that workmen and the public are fully protected when explosives are being used.

Be sure that proper signing, as specified in the [MUTCD](#) manual adopted by the state, is in place before using explosives.

54.0 SAFETY REGULATIONS – DRIVER RESPONSIBILITY

All persons operating an ITD-owned, -leased, or -rented motor vehicle must possess a valid driver's license and know and obey the state motor vehicle laws. Driving records, both private and departmental, must be acceptable to ITD.

54.1 Drivers and Equipment Operators

Check the following before accepting the assignment to operate your vehicle for the day:

- Make sure all tires are properly inflated and in roadworthy condition. Check the oil, water, and fuel. Turn off cellular phones and other transmitting equipment when fueling vehicles.
- Check the brakes, lights, horn, windshield wipers, and rearview mirror to see that they are in operating condition. See that all glass is intact and clean.
- Check the safety equipment before taking the truck or vehicle out. Ensure back-up alarms are working on all equipment with obstructed vision.
- Report shortages or defects of equipment to the foreman at once.

Safe operating procedures:

- Wear seat belts at all times.
- Govern speed primarily by the stopping distance required, but never faster than the posted speed limit.
- Maintain brakes in good working order.
- Never pass another vehicle at intersections or railroad crossings. Never pass where vision is cut off by hills, curves, or obstructions.
- Always maintain a safe distance from the vehicle ahead of you.
- Do not allow anyone to ride on the running board of equipment or to get out of the vehicle until it has come to a complete stop.
- Make certain that your vehicle is loaded properly and that the load is secured before moving. Never leave the tailgate of a truck down unless it is necessary to accommodate the load. As soon as the load is removed, fasten the tailgate shut.
- Load the vehicle so that no debris or aggregates will fall. Do not overload. You are responsible for paying any fine imposed upon you if guilty of overloading.
- Do not leave motor vehicles unattended unless the ignition is turned off and the brakes are effectively set. If you must get out for a short time, take the vehicle out of gear and set the emergency brake. If the vehicle is left on an incline, turn the wheels into the curb or bank and block them.
- When parking or leaving equipment, move it off the roadway and park it where it presents the least possible traffic hazard. When leaving equipment along the roadway overnight, park it as far from the travelway as possible.
- Do not make repairs or adjustments to or oil the equipment while it is in motion. Before any adjustment or repair is made, the equipment must be stopped and taken out of gear.

- When operating on the roadway surface or shoulders, carry on the operation so that the equipment moves in the same direction as the traffic whenever possible.
- Take special precautions against placing your equipment too close to the edges of cuts or fills.
- Night operations are especially dangerous. The traveling public does not expect to find work in progress at night. Therefore, take extra precautions to warn motorists that an operation is being conducted. Consult with the District Traffic Engineer on the extra precautions that should be used for night operations.
- Unless absolutely necessary, operate equipment only on the right side of the road and only when traffic is controlled. Equipment must be properly lighted and moved slowly.
- Do not permit lights to glare into the eyes of oncoming drivers. Turn off all auxiliary lights when other vehicles approach, allowing only the headlights, clearance lights, and warning lights to show.
- When working or traveling in low-visibility conditions such as fog or blowing snow or dust, efforts should be taken to make your equipment or operation as visible as possible, such as through the use of flashing and auxiliary lights.
- Lock the rear steering/articulation mechanism before transporting equipment with dual-type steering (such as rotary snow plows and articulated motor graders) under its own power.

54.2 Belt and Bucket Conveyors

Use enclosures or railings on power-driven conveyors having parts on which people might become caught; guards are required up to 2.1 m height from the ground.

Provide adequate sideboard protection where there is danger of material falling off the side of the belt or out of the buckets.

Level conveyors used at stockpiles and see that they are free from obstacles which might cause the conveyors to tip.

Install power-control devices at convenient places for stopping conveyor machinery.

54.3 Tractors and Bulldozers

When leaving or parking bulldozers, front-end loaders, motor patrols, and graders, drop the blade or bucket and lock the brakes.

Never wear steel- or iron-shod shoes, caulks, or heel plates when operating this equipment.

Where possible, make all turns with the driver on the uphill side. Never make turns when there might be danger of overturning.

Never crawl under a dozer blade or allow the man on the ground to couple any piece of equipment to your unit with his bare hands. Gloves should be worn.

54.4 Shovels, Cranes, Backhoes, and Drag Lines

Only regular operators or those specifically designated will operate a power shovel, crane, backhoe, or drag line. Hard hats are required to be worn by all workers around this equipment.

All crane and shovel cables must be inspected at regular intervals, but not less than once each month. All other parts must be inspected daily and have defective parts repaired at once.

Keep floors, steps, handholds, and ladders clear and clean at all times.

When positioning equipment, use mats or planking to distribute the load where the ground is soft. If the shovel or crane is placed on a bank over excavation, install shoring and bracing to prevent cave-ins. Watch for slides or cave-ins at all times. Remove overhanging trees and rocks before continuing operations. Be prepared to move the equipment whenever, in your judgment, a slide or cave-in seems imminent. Caution all employees against being caught between the cab and chassis and any stationary object or between the frame and raised dump body of trucks.

Make sure all machinery guards are in proper place before starting the shovel or crane. Know the locations of all employees who may be working in the vicinity of the unit. Locate and stay clear of power lines in the vicinity of the unit.

Never swing the bucket or boom over the cab of a truck or over workers. Do not allow anyone to walk under the bucket or boom of the unit.

Operators shall not leave the cab until the master clutch of the unit has been disengaged.

54.5 Parking

When it is necessary to park equipment on each side of the traveled roadway, separate the equipment by at least 92 m (300 feet). Otherwise, bring the vehicles to the same side of the road and head them in the proper direction. In all cases, move the vehicles as far from the centerline as possible, allowing traffic to move by with the least possible hazard. When you must confer on matters pertaining to your work, do so in a safe location away from traffic.

54.6 Backing

Avoid backing whenever possible. When parking at a curb, allow sufficient clearance to pull out without backing. Avoid turning into a place where it is necessary to back

into traffic. It is safer to drive around the block than to back into intersections or pedestrian crossings.

Try to have a helper to guide you whenever it is necessary to back. Ensure back-up alarms are working correctly.

Know the signals to be given in moving equipment backwards. Give the signals distinctly. If any question arises, stop the vehicle at once and straighten out the signals.

54.7 Hand Signals

Use hand signals (not voice) in all maneuvering operations. These signals are as follows:

- For movement of vehicles. The palm of the hand shall face the direction in which the vehicles shall move and the hand and forearm shall be swung from the elbow slowly in the direction the unit is to move.
- Stopping signal. The palm of the hand, with fingers up, shall face the driver and the hand and arm shall be held rigidly.
- To raise and lower the truck body. Extend the arm, with fist clenched and thumb pointing upward to signal raising the body. The same extended arm and clenched fist with the thumb pointing downward signifies lowering the body. Extend the arm with the palm of the hand held flat and facing the ground and slowly move the arm back and forth horizontally for stopping the body.

54.8 Breakdowns

In case of a breakdown, notify (through your supervisor, if possible) the nearest ITD repair shop.

If possible, move the equipment off the traveled highway, placing flares, reflectors, flags, and warnings to protect traffic on the roadway.

Stay with the equipment until help comes to remove the unit.

55.0 SAFETY REGULATIONS – FIELD EQUIPMENT

Responsibilities regarding slow-moving and stationary equipment as well as other field equipment are given in the following sections.

55.1 Warnings and Flags

ITD-approved red flags, a minimum size of 305 mm x 305 mm, should be displayed at the extreme outer edge of all grader moldboards.

Slow-moving equipment can be as dangerous as stationary equipment. For the safety of the traveling public, use warning signs, flagpersons, or a shadow vehicle with proper signing. Display a slow-moving vehicle emblem on all vehicles traveling less than 40 kph when equipment is operating within the highway right-of-way or on other adjacent roadways. Do not use pennant flags on maintenance trucks, pickups, panels, and sedans.

55.2 Lighting

Do not operate any vehicle between sundown and sunrise unless the vehicle is equipped with two headlamps, taillights, stop lamp, clearance lights, and reflectors, as prescribed by law.

Mount flashing amber lights on all maintenance vehicles so they are visible from the front and rear of the unit at all times. Flashing lights shall be mounted in accordance with [Section 795.0 of the Maintenance Manual](#).

55.3 Chains – Towing, Safety, and Tire

In all engine-powered vehicles, carry a towing chain, tow strap, or cable in good condition and of sufficient capacity to pull the vehicle without breaking. Use towing chains only to remove a vehicle from a hazardous location when the vehicle is obstructing traffic or endangering the traveling public. Move it only far enough to be parked in a place that does not obstruct traffic.

If it is absolutely necessary for one ITD vehicle to tow another, use a solid hitch-and-pintle hitch lock to prevent the towed vehicle from ramming the rear of the towing vehicle.

Use safety chains whenever any vehicle or trailer is transported from one location to another by an ITD vehicle.

55.4 Safety Equipment in Vehicles

All commercial vehicles are required to have emergency reflective triangles [six (6) fuses with 30-minute burning capacity or three (3) liquid-burning flares that burn 60 minutes minimum]. If needed, place the flares 31 m to the rear and front of the disabled vehicle and one immediately to the left.

Do NOT use flares if a hazardous or flammable material is present. Use triangles or chemical (fluorescent) light tubes.

Keep a first-aid kit in each vehicle. Inspect these kits at least every six months to ensure that the contents are in good condition. Kits are required to contain supplies appropriate to the work being done and/or needs of the crew. (No medicines are allowed.)

Keep a flashlight with every vehicle used at night. Flashlights and batteries can be acquired from district supply.

According to its use, each maintenance vehicle will be equipped with a shovel, a 0.6 m (24-inch) pry or pinch bar, and a fire extinguisher. These tools are for emergency use and are kept in the vehicle at all times. The operator is responsible for seeing that these items are in the unit and in safe operating condition. Report shortages of these items to the foreman at once. Check the fire extinguisher each month for load and leakage. An annual inspection is also required; all inspections must be noted on an attached tag. Small tools such as pliers, screwdrivers, crescent wrenches, etc., are furnished by the operator.

55.5 Transporting Equipment

When utilizing truck-trailer combination vehicles to transport equipment that exceeds the legal limits for width, length or weight, the transport vehicle is to be equipped with the necessary permits and safety equipment. Warning flags (12" x 12" in size and red in color) are required on all overwidth vehicles. The flags shall be fastened to each front and rear corner of the vehicle or load if it exceeds the legal width. "Oversize Load" signs shall be displayed on the front and rear of all loads exceeding legal width. The signs shall be 18 inches high by 7 feet wide. Letters shall be standard series C, black in color, and 10 inches tall with a stroke width of 1 5/8 inches on a yellow background.

56.0 SAFETY REGULATIONS – SHOP EQUIPMENT

Responsibilities regarding shop equipment are given in the following sections.

56.1 Welding Equipment

Only those employees well trained in welding and cutting operations are allowed to use welding equipment. Handle all apparatus in strict accordance with the manufacturer's instructions, local and state fire codes, and recognized safe practices. Welding cannot take place in buildings classified as hazardous occupancy.

Shield or screen welding, cutting, or burning operations to prevent injury to other employees or the public. No one will be allowed to watch the operations without the proper equipment for protection. Wear personal protective clothing and equipment as approved for this operation.

Store oxygen and acetylene cylinders at least 6.1 m apart or separate by a noncombustible barrier at least 1.5 m high with a fire rating of at least 1/2 hour [Idaho General Safety and Health Standards and 1 CFR 1910.252(A)(IV)(C)]. All cylinders must be secured.

Inspect all hoses, gauges, connections, tanks, and leads before use. Repair or replace defective equipment immediately. Make sure electric welding machines are grounded and electrode holders and connecting cables are insulated.

Do not weld in close proximity to explosives, flammable gases, or vapors. Also, do not weld on any tank or container which has held flammable liquids until the container is filled with water or decontaminated against toxic fumes and danger of exploding. Have approved fire extinguishers available at all welding, cutting, or burning operations.

If you leave your work unattended, close both oxygen and acetylene valves and drain all pressure from the regulator.

56.2

Small Tools

Use only the proper tool for the job and only tools in good condition. Tools are defective if they have burred and mushroomed heads, rough and loose handles, sprung and spread jaws, and dull cutting edges.

Make sure you are in the proper position to use tools such as axes, hatchets, sledge hammers, and picks. Have the proper stance and good footing and be sure you are clear of obstructions and fellow workers.

Employees with long hair who work around chains, drill presses, belts, or other machinery or road equipment must protect their hair from moving parts. Besides the danger of direct contact with moving parts that may occur when turning the head or leaning over, hair may be drawn into moving belts or rolls by static electricity. Employees must furnish and wear hair protection, such as nets, or cut their hair to eliminate the hazard. Hair protection does not replace the hard hat. (Hair protection should be used where hair is long enough that when the head is turned, the hair flips or falls in the opposite direction.)

Keep tools with a sharp edge in good condition. Do not fine dress them on an emery wheel; use a sandstone or oil stone. Always carry the cutting edge of a sharp tool away from your body. Never carry unguarded sharp-edge tools in your pocket. The force of the blow on a sharp-edge tool should always be away from you, never toward you. Hold a draw knife securely and away from you. Hold the material securely in a vise.

Use a file that has a good, substantial handle. Never strike a file with a hammer – pieces of the hardened steel are almost sure to fly.

Inspect chisels and punches for tempering and cracking. Keep heads well dressed and free from burrs. Always use safety goggles during chipping, cutting, or driving operations.

Inspect hammer handles often to make sure they are not split or loose. Keep the face of the hammer flat and redress it if it becomes round or chipped.

Use wrenches that are the proper type and size. It is unwise to use a piece of pipe as an extension to a wrench handle.

56.3 Bulletin Boards and Signs

Every maintenance building, shop, or garage shall have a bulletin board for posting safety material, posters, and other information pertinent to employees.

Locate bulletin boards in a prominent, well-lighted place where they are readily accessible to the greatest number of employees.

Display safety posters and articles for at least two weeks. The supervisor or lead-worker in charge will keep the board current and neat and will require all employees to read and initial all displayed safety information.

57.0 LIQUEFIED PETROLEUM GAS (LPG)

Storage, safety, and transportation of LPG are explained in the following sections.

57.1 LPG Storage Containers

Cylinders shall be designed, constructed, tested, and maintained in accordance with U.S. Department of Transportation (DOT) specifications and regulations. Other type pressure vessels and containers shall be designed, constructed, tested, and maintained in accordance with national recognized good practice.

Each cylinder, pressure vessel, or group of containers shall be marked with the name of the gas contained in accordance with national recognized practice.

57.2 LPG Storage and Use of Cylinders

All compressed gas cylinders in service or in storage shall be adequately secured to prevent falling or being knocked over.

Exception: Compressed gas cylinders in the process of examination, servicing, and refilling are exempt from this section.

57.3 Safety Regulations for LPG

All LPG handlers shall be certified in the safe use and storage of LPG per *OSHA Regulations #5102-1292*.

- Legible operating instructions shall be maintained at the operating location for any installation that requires any operation of equipment by the user.
- Smoking shall be prohibited in or around supply system enclosures. "NO SMOKING" signs shall be conspicuously displayed.
- LPG should not be stored in any building that contains pits or basements.

- All LPG cylinders shall be secured (i.e., chained) in an upright position at all times to minimize the possibility of movement, tipping over, or physical damage.
- Containers stored in buildings shall not be located near exits and stairways or in areas normally used or intended to be used for the safe egress of people.
- Empty containers that have been in LPG service shall be stored in the open. If stored inside, they are considered full containers and part of the 136.1 kg (300-pound) capacity explained in [Section 57.6](#).
- Storage locations shall be provided with at least one approved fire extinguisher having a minimum capacity of 9.1 kg (20-pound) dry chemical with a B-C rating.
- All cylinders shall be cleaned (with a wire brush) and repainted before taking to a contract vendor for re-certification.
- All cylinders require re-certification every 12 years (i.e., 12 years after the date of manufacture and every 12 years thereafter). Information concerning certification is stamped on the valve safety housing (top of tank). Re-certification will be performed by the contract vendor in respective areas. Dates and re-certification information (including initials) will be applied by the contract vendor.
- Valve outlets on tanks shall be equipped with an effective seal (POL plug). This plug shall be in place whenever the container is not connected for use or when being transported for refilling.

57.4 Transportation of LPG

When LPG is being transported, portable DOT containers must be marked and labeled in accordance with the following:

<i>Hazardous Materials Description and Proper Shipping Name</i>			
<i>Shipping Name</i>	<i>Hazard Class</i>	<i>ID No.</i>	<i>Label Required</i>
<i>Liquefied Petroleum Gas</i>	<i>Flammable Gas</i>	<i>UN1075</i>	<i>Flammable Gas</i>

The portable tank must be labeled on two opposing sides with the proper shipping name and identification number.

All shipping papers and required placarding must be in order when transporting any LPG.

57.5 LPG-Equipped Mobile Vehicles

Vehicles with LPG fuel systems mounted on them for purposes other than propulsion may be parked, serviced, or repaired inside buildings in accordance with the following:

- The fuel system shall be leak-free and the container(s) shall not be filled beyond specified fill limits.
- The container shutoff valve shall be closed except when fuel is required for testing or repair.
- The vehicle shall not be parked near sources of heat, open flames, or similar sources of ignition or near unventilated pits.
- The maximum amount that may be stored in the vehicle is 1,136 L (300 gallons). Anything in excess of 1,136 L (300 gallons) shall comply with LPG cargo vehicle requirements.

In addition to the above-listed requirements, since the use of the vehicles is seasonal, they should be parked outside and away from buildings during the off season.

Containers carried as part of the service equipment on highway mobile vehicles (distributor trucks, patching machines, tar pots, etc.) are not to be considered in the total storage capacity, PROVIDED such vehicles are stored in private garages and carry only one LPG container with an LPG capacity of 45.4 kg (100 pounds) or less per vehicle. Container valves shall be closed when not actually being used. When the mobile vehicle carries two or more containers, their capacity shall be included in the 136.1 kg (100-pound) maximum allowed in any single storage building.

57.6

Inside Storage of LPG

LPG shall not be stored in any building that has a basement or pit. A 56.8 L (15-gallon) limit should be adhered to for inside storage. Any additional containers in excess of this amount need to be stored outside, as specified in the *Uniform Fire Code, Article 82*. The area these containers are stored in should be free from combustible material, e.g., weeds, lumber, etc. The containers should be protected from overheating due to exposure from the sun. They should be protected from vehicular traffic and secured so they will not tip over. Containers should not be stored next to heat in the event of a fire within a building.

Quantities of LPG within shop/maintenance-type buildings, which are otherwise classified as H-4 occupancies, are limited by *UBC Table 9-A* to 56.8 L (15 gallons) per control area. A control area is a 1-hour, fire-resistive enclosure area that provides a 1-hour occupancy separation between the LPG storage and the major shop-use area. The number of control areas within a building cannot exceed four.

However, you can subdivide a shop into two distinct occupancies:

- H-4, repair shop
- H-2, LPG storage area

This type of mixed occupancy allows you to store more than the 56.8 L (15 gallons) within the H-2 building portion. In order to provide for this mixed-occupancy building, you need to have only a 1-hour occupancy separation between the gas storage area and shop area. However, your buildings in this mixed-use condition are limited in floor areas to that which is allowed by *UBC Table 5-C*, based on the floor area needed for each use and the types of building construction. If you were to permit 9.3 m² (100 square feet) of LPG storage area of 1-hour construction with not less than 25 percent of the H-2 (gas storage) perimeter wall located at exterior wall locations, you could exceed the 56.8 L (15-gallon) limit to 136.1 kg (300 pounds).

All H-4 shop buildings over 278.7 m² (3,000 square feet) are required by *UBC 3802(f)2* to be protected by automatic sprinkler protection. All H-2 occupancies must be protected by automatic sprinklers regardless of size.